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ABSTRACT

A battery of learning preference and course evaluation methods was used in a class of 38 college undergraduates enrolled in an educational psychology course. This investigation was designed to test the hypothesis that students' evaluation of pedagogical methods is modified by their learning style. Results indicated that students who actively participated in classroom discussions rated interactive teaching components such as voluntary group study sessions as very important to their learning, while students with low verbal participation scores rated less interactive components such as lectures or texts to be more valuable. The relationship between class participation and dimensions of Kolb's Learning Style Inventory (Kolb, 1985) and The Myers-Briggs Type Indicator (Myers, 1980) was examined. Interviews with students indicated that students felt the use of different teaching methods provided a more interesting and stimulating learning experience. (Contains 11 references.) (Author/PB)

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Running head: STUDENT PREFERENCES FOR DIFFERENT TEACHING METHODS

Preferences of Participating and Non-Participating Students For Different Pedagogical Methods

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Abstract

Learning style as indicated by class participation has a relationship to how students rate teachers and the instructional components of a course. A battery of learning preference and course evaluation methods was used in a class of college undergraduates enrolled in an educational psychology course. This investigation was designed to test the hypothesis that students' evaluation of pedagogical methods is modified by learning style. Results indicate that students who actively participate in classroom discussions rate interactive teaching components such as voluntary group study sessions as very important to their learning, and students with low verbal participation scores rate less interactive components such as lectures or texts as valuable. The relationships between class participation and dimensions of Kolb's Learning Style Inventory (Kolb, 1985) and the Myers-Briggs Type Indicator (Myers, 1980) are examined.

Preferences of Participating and Non-Participating Students For Particular Pedagogical Methods

The presence in the literature of a large number of articles on student learning styles suggests that educational researchers are interested in this subject. Between January 1992 and December 1994, 95 articles with Learning Styles in their titles appeared in the ERIC database. The authors of six of those articles addressed learning style differences in their abstracts. Thus, we can assume that more than a few researchers in education believe an understanding of learning styles is important.

Different students have different learning styles (Dunn & Griggs, 1988; Reiff, 1992). A number of researchers suggest that people can be grouped as having either active or reflective learning preferences. Some students prefer to take a hands-on, active, experimental approach to processing information, while others prefer a more reflective, observational approach (Carrell & Monroe, 1993; Kolb, 1984).

When we began this study, we were interested in how students with different learning preferences would evaluate a variety of teaching methods. We hypothesized that if students' learning styles differ, they would likely differentially rate the value to their learning of various teaching methods. A search of the literature turned up only one study that investigated student evaluation of teaching and learning styles. Armstrong (1981) examined the relationship between learning preference style and

student evaluation of teaching. He hypothesized that "global evaluation of instruction is positively related to the match between the student's learning style preference and the instructor's teaching style as determined by a series of self-report instruments" (p. 28). While Armstrong's findings suggest a positive relationship between students' learning preferences, their perception of teacher style, and their global rating of teacher effectiveness, we were interested in how students rate components of instruction. Basing our study on the observation that some students prefer an active approach to learning and others prefer a reflective approach, we decided to measure student participation to see if it correlated with measures of learning preference and how different student groups evaluated different instructional components.

In this study we made the following hypotheses: (1) Students come to the classroom with different learning preferences. (2) Learning style has a significant effect on student evaluation of course structure. (3) Students who participate in classroom discussions will rate interactive instructional components more favorably than students who do not participate. (4) Students in the active group will seek more interactive ways of learning course content than students in the reflective group.
(5) There is a significant difference between participating and non-participating groups on the active-experimental minus reflective observation score on Kolb's Learning Style Inventory. (6) There is a relationship between participating and non-participating groups and personality dimensions of the Myers-Briggs Type Indicator (Myers, 1980).

Building on the idea that active participation is essential in the learning process, we chose Kolb's (1985) Learning Style Indicator as an instrument to differentiate active versus reflective styles among a college student population. Kolb's model of learning consists of a four-stage cycle, as shown in Figure 1. The first stage, Concrete Experience (CE), is characterized by personal involvement or learning from direct experiences and feelings. The student is directly involved in the learning activity that enables him or her to learn through a "hands-on" approach. Concrete Experience is followed by stage 2, Reflective Observation (RO), which involves watching, listening, and reflecting upon one's observations. Teaching modalities appealing to this stage of the learning cycle frequently employ a lecture format or video presentation. Stage 3, according to Kolb, is Abstract Conceptualization (AC), which involves logically integrating ideas and developing theories. Finally, stage 4, or Active Experimentation (AE), is characterized by active decision making and problem solving. Students learn to experiment with and influence a situation.

According to Kolb, learners fit into one of four types: divergers, assimilators, convergers, or accommodators. The learning style or "type" is dependent upon which part of the learning cycle learners feel most comfortable or able to learn in. Divergers prefer to learn by concrete experience and reflective observation. Assimilators tend to learn through reflective observation and abstract conceptualization. Convergers like

abstract conceptualization and active experimentation. Accommodators prefer active experimentation and concrete experience (Kolb, 1984).

Figure 1 of Kolb's four stage learning cycle should go about here

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Kolb believes that learners grasp information in two ways, through concrete experience and abstract conceptualization. Kolb also believes that students process information in two divergent ways, through reflective observation and by active experimentation. It follows that a course structure that utilizes all dimensions in Kolb's learning cycle should be employed in order to best meet the needs of diverse students (Kruzich, Friesen, & Van Soest, 1986; Murrell & Claxton, 1987; Stice, 1987).

Methods

The preliminary investigation included thirty-eight undergraduate students enrolled in an educational psychology course entitled Psychoeducational Issues in Human Development. The course was conducted using the Direct Instruction approach. Rosenshine (1979) provides a summary of this highly structured teaching strategy which provides students with goals of the lesson, comprehensive instruction, performance monitoring, and feedback on progress.

Direct instruction is a basic behavioral model for teaching. Using the principles of direct instruction, we designed this class in educational psychology to provide various

alternatives that students could employ to master course content. Teaching modalities used were: lecture, question-and-answer sessions, small-group discussions, peer tutoring, and feedback sessions. Course content was presented using video presentation, a textbook, and journal articles. Comprehensive study questions covered the content presented in the video and readings as well as discussion questions. Students had a choice to attend class to view videos and enter into discussions or they could view the videos out of class and read and study on their own. Attendance was mandated only during test periods. Students were given the opportunity to voluntarily participate in the current research.

During the first week of class we asked students to complete Kolb's Learning Style Inventory and the Myers-Briggs Type Indicator. They completed the course evaluation at the final class meeting. During all class meetings, graduate assistants observed and recorded all student verbal participation. For the purpose of this investigation, student verbal participation served to indicate an "active" approach to learning. Students who participated more than the median number of times were placed in an "Active" group and students who participated less than the median number of times were placed in a "Reflective" group. Nineteen students made up each group.

Instruments

Kolb's Learning Style Inventory (LSI), which measures an individual's preferred learning style or preferences, was utilized in this investigation. The Myers-Briggs Type Indicator, which assesses personality characteristics, was also used.

Students completed a comprehensive course evaluation that included a rating matrix requiring them to rate their preferences for various instructional components of the course.

Eight students, selected by styles indicated by the LSI, were chosen to participate in structured interviews that were used to further evaluate student preferences in regard to pedagogical method.

Results

Students who actively participated in classroom discussions rated interactive teaching components such as voluntary group study sessions as very important to their learning. Students with low verbal participation scores rated less interactive components such as the reading materials as most valuable. A relationship between class participation and the active-experimental and reflective-observational dimensions of Kolb's Learning Style Inventory (Kolb, 1985) was also found.

- There is a difference in group study participation between active and reflective students ($t = 4.12$, $p < .01$). Students in the active group attended voluntary study sessions more frequently than students in the reflective group.

- A difference was found in AE minus RO scores for the active and reflective groups ($t = 2.5$, $p < .05$). Students in the active group tended to score higher on the active dimension of Kolb's Learning Style Inventory.
- No relationship was found between class participation and measures on the Myers-Briggs Type indicator.

Results of rating matrix of instructional components of the course follow.

- 84% of students in the active group rated discussion of video tapes as "very helpful," whereas only 47% of students in the reflective group rated this component in the same manner.
- 58% of the active group rated question-and-answer sessions as very helpful; only 26% of the reflective students rated this dimension as very helpful.
- 68% of the active students and 25% of reflective students rated small-group study sessions as very helpful.
- 63% of the active students, as opposed to 37% of the reflective students, rated individual help from the instructor as very helpful.
- 63% of the reflective students and 32% of the active students rated Ed. Psych review of readings as very helpful.

Student interviews

At the conclusion of the course, eight students were interviewed about their learning experiences. Students were chosen for interview based upon learning

preference and their level of participation in the classroom. A student with high participation scores and a preference for active learning approaches made the following comments:

"There were lots of different ways to learn the same material in this class. It was really nice 'cause we had videos and study questions and a lot of interaction with the whole class and the instructors. We had a lot of time to ask questions, and we don't usually have that in other classes. It wasn't the boring standup lecture, take notes kind of thing."

Another, less participatory, student's response was quite different. "It really helped me to have a choice. I was able to pick the one area that I liked best and really concentrate on that and not worry so much about the other ways of learning the material. I liked the videos best and the question-and-answer sessions right before the tests. Those were the things that helped me out the most."

Other comments included the following. From the active group: "I used a lot more group learning in this course than I've used in others because we developed a [student directed] study group. After we went to [instructor directed] study sessions, we would go over all the material again and it was a lot more helpful. I think I spent a lot less time and learned a whole lot more than if I had studied by myself."

A student from the reflective group said, "I don't know that I've been in a class this large where there has been this level of discussion or where the professor knows your

name. There were a lot of options for succeeding. Usually in other classes there's only one way to succeed. I learned a lot in this class. It has been really practical and I think the way I learned the best was listening to the discussions."

These quotations exemplify the reactions of students about a course in which a rigorous schedule of learning was followed and a large volume of content was presented. Most student responses were positive, citing the diverse presentation of materials and the choice of methods they could use to learn the content.

Discussion

Our findings do not discourage our belief that teachers who employ a variety of instructional modalities are likely to increase student participation in assigned activities. The potential to increase overall learning, raise test scores, and include students who do not excel in traditional academic settings is also possible we believe. Interviews with students demonstrate that they have different preferences and learning styles. We think that students' learning preferences affect how they judge the worth of instructional methods. Learning styles, we believe, have an impact on students' selection of course components, participation in class discussion, motivation to study, and satisfaction with the learning experience. All of the students interviewed felt that the use of different methods provided a more interesting and stimulating learning experience.

Results of this preliminary investigation encourage us to pursue our thinking about student preferences and expand data collections to a broader sample as well as to

include measures of motivation. We believe our findings have implications for teachers wishing to evaluate their own teaching styles and pedagogical methods in order to increase student motivation and meet the learning needs of all students.

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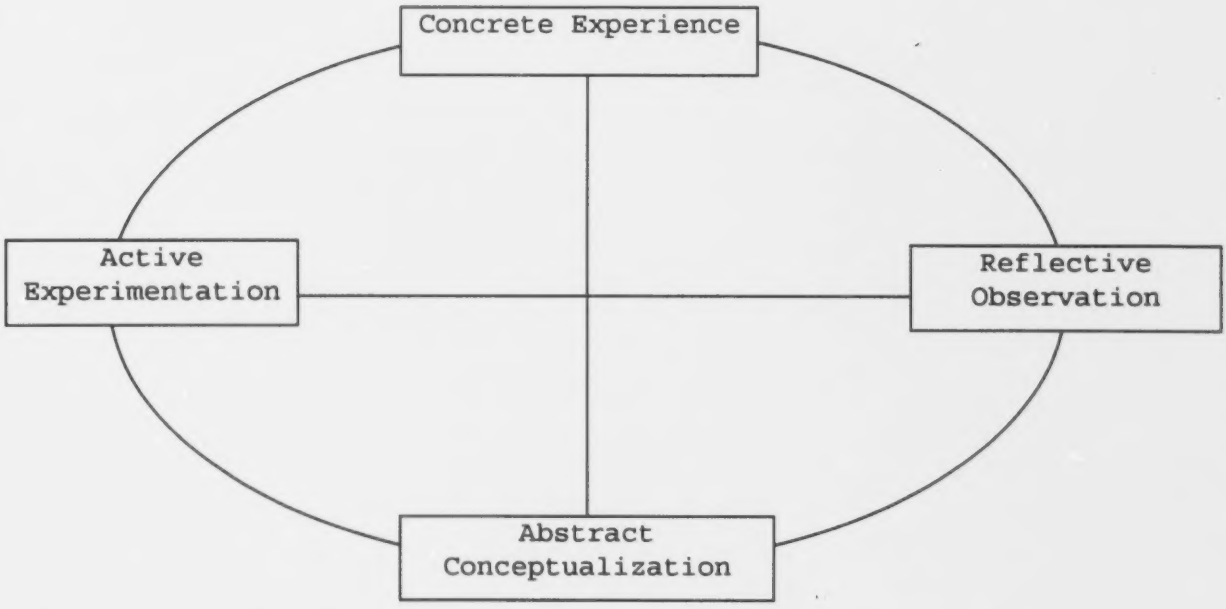

Figure 1. Kolb's four stage learning cycle